United Nations E/CN.3/2008/33

# Economic and Social Council

Distr.: General
18 December 2007

Original: English

**Statistical Commission**
**Thirty-ninth session**
26-29 February 2008
Item 3 (c) of the provisional agenda*
**Items for discussion and decision: International Comparison Programme**

## Report of the World Bank on the International Comparison Programme

### Note by the Secretary-General

In accordance with a request of the Statistical Commission at its thirty-eighth session,** the Secretary-General has the honour to transmit the report of the Global Office of the International Comparison Programme at the World Bank on the completion of the 2005 round and the publication of the regional and global results. The Commission may wish to comment on the outcome of the programme and steps taken to publish global and regional data, to ensure availability and access, and to publicize and expand use of these data.

* E/CN.3/2008/1.
** See *Official Records of the Economic and Social Council, 2007, Supplement No. 4* (E/2007/24), chap. I.A.

07-65121 (E) 100108

# Report of the World Bank on the International Comparison Programme

## Contents


| | | *Paragraphs* | *Page* |
|---|---|---|---|
| I. | Introduction | 1–2 | 3 |
| II. | Overview of the achievements of the Programme | 3–42 | 3 |
| | A. Release of global results | 3–10 | 3 |
| | B. Regional data release | 11–15 | 4 |
| | C. The ring comparison | 16–20 | 5 |
| | D. Data validation and handling of special data issues | 21–28 | 7 |
| | E. Data policies (revision, access and confidentiality) | 29–31 | 8 |
| | F. Sharing of knowledge gained from the 2005 round of ICP | 32–33 | 9 |
| | G. ICP software | 34–36 | 9 |
| | H. Governance of the ICP 2005 round | 37–42 | 10 |
| III. | Steps remaining to complete the 2005 round | 43–46 | 11 |
| IV. | Conclusions and points for discussion | 47–48 | 12 |

# I. Introduction

1. The present report marks the completion of the International Comparison Programme (ICP) 2005 round achieved through an extensive international collaboration. Through the working together of national statistical offices, designated regional coordinating agencies, the Global Office at the World Bank and the Organization for Economic Cooperation and Development (OECD)/Eurostat programme, significant achievements have been realized since this round started in early 2003. The statistical system, including the network of expertise in place for gathering data and establishing regional and global purchasing power parities (PPPs), provides a sound basis for the future rounds of ICP.

2. This report provides an update on the main steps taken to complete the 2005 round since the submission of the previous report to the Statistical Commission (E/CN.3/2007/15). It is a summary report, as there are a number of more detailed reports covering the global and regional results published in 2007 that are available for further information, including the global report released on 17 December 2007. Furthermore, the report does not enter into any discussions on the future rounds of ICP, as this will be a special subject for consideration at the thirty-ninth session of the Statistical Commission based on the review of the Friends of the Chair of the ICP 2005 round and a summary paper by the Executive Board of ICP presenting its views on the future of the Programme.

# II. Overview of the achievements of the Programme

## A. Release of global results

3. The ICP Executive Board at its meeting held on 5 and 6 November 2007 had been provided with a review of preliminary PPPs and related measures for gross domestic product (GDP) and components. The Executive Board directed the Global Office to publish the results on either 13 or 17 December 2007. It was recognized there were some remaining technical issues to be resolved with the regional coordinators at the meeting to be held from 19 to 21 November 2007. The Board delegated the authority to approve the results for publication to Dennis Trewin, Chair, ICP, and Shaida Badiee, Director, World Bank Development Data Group, per the recommendation of the Global Manager.

4. Extensive collaborations among regional teams and the Global Office took place during November leading to the completion of the preliminary data release. The gathering together of all regional coordinators from 19 to 21 November in Washington, D.C., to review the results and resolve outstanding issues, constituted a significant event. This meeting also included a subset of the Technical Advisory Group (TAG). The regions accepted the preliminary results, with the understanding that remaining data issues were the responsibility of the Global Office.

5. Members of the Technical Advisory Group were requested to review the preliminary results and provided positive reactions to the data and the global report.

6. The conditions under which the Executive Board agreed to approve the preliminary data release included: publishing results for GDP and three components: actual individual consumption, collective government consumption, and gross fixed

capital formation; publicizing the release widely to broaden use; preparing a media briefing package for the press conference; providing a summary of results to highlight interesting aspects of major findings in form of charts and graphs; and providing availability and ease of access to data on the ICP website.

7. The global data release was successfully launched on 17 December 2007 with considerable coverage of the event in national and international media. The launch provided extensive information including the global report, a press briefing package, and a list of frequently asked questions among other material. The report and the launch of the global results stressed that the undertaking had brought together the data of two separate PPP programmes. The first was the global ICP programme conducted by the ICP Global Office within the World Bank, which had provided overall coordination for the collection of data and calculation of PPPs in more than 100 (mostly developing) economies. The programme was organized in five geographical areas: Africa, Asia-Pacific, the Commonwealth of Independent States (CIS), South America and Western Asia. Regional agencies took the lead in coordinating the work in the five regions.

8. The global report also stressed that, in parallel, the Statistical Office of the European Communities (Eurostat) and the Organization for Economic Cooperation and Development (OECD) had conducted their own 2005 PPP programme which included 46 countries. Eurostat covered 37 countries: the 25 States members of the European Union (EU), the European Free Trade Association (EFTA) countries Iceland, Norway and Switzerland, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Romania, Serbia, the former Yugoslav Republic of Macedonia and Turkey. The OECD part of the programme included nine other countries: Australia, Canada, Israel, Japan, Mexico, New Zealand, Republic of Korea, the Russian Federation and the United States of America.

9. The ICP Global Office combined the results from each of the five regions with those from the OECD/Eurostat PPP programme into an overall global comparison, so that results for all participating countries could be compared directly. The ring comparison was developed specifically to link the regional PPPs without changing the relative results within a region.

10. Since the preliminary release, the Global Office has been working to prepare for the final global report, to be published in the first quarter of 2008. The *ICP Handbook* in final form will be published at the same time.

## B. Regional data release

11. Asia published its final results on 10 December 2007 after a preliminary data release in June. The 2005 ICP Asia and the Pacific report is entitled *Purchasing Power Parities and Real Expenditures*.[1] The report and the data tables are available on the Asian Development Bank website (http://adb.org/Documents/Reports/ICP-Purchasing-Power-Expenditures/default.asp) and were well received, with good coverage in the regional and international media. The region introduced new methodologies for housing and government compensation. A reference-volume approach was used for housing. Productivity adjustments were applied to the government consumption data.

[1] Manila, Asian Development Bank, December 2007.

12. Africa has published results for consumption, excluding housing, for 48 countries. Final data have undergone a number of reviews with the countries, with a final review conducted as part of a special data quality review meeting in Accra on 1 December 2007 with the heads of national statistics offices from 50 African countries. An outcome of this meeting was the Accra Declaration Arising from the African Development Bank's International Comparison Programme Workshop, with a statement about advances made in the region with ICP and statistical capacity-building. The Declaration ended with a recommendation to African Governments, bilateral, international and regional organizations and the African Development Bank to scale up statistical capacity-building efforts. The African Development Bank also led an extensive review of the national accounts in all countries with the goal of improving comparability of expenditure weights and per capita aggregates. The updated GDP results were also reviewed with the International Monetary Fund (IMF) and the World Bank during a special consultation session on 17 and 18 October 2007 to minimize data discrepancies. Final 2005 Africa ICP data release will take place in December 2007 shortly after the global results are published. The region followed the lead of Asia by also computing reference-volume PPPs for housing and adjusting government salaries for productivity.

13. The Latin American region was the first among regions to publish final data in the first quarter of 2007. However, the regional coordinators for the region did stay involved with the global programme and participated in the preparation of the global results.

14. Western Asia will release final data in January 2008. The final results have been endorsed by the countries and the final report is being prepared. The region adopted a method for housing that takes into account both rental data and physical quantity indicators to compute PPPs. As in Asia and Africa, government compensation was adjusted for productivity.

15. Eurostat/OECD/Commonwealth of Independent States (CIS) had two separate data releases, with the OECD portion released on 21 November and that of Eurostat on 17 December 2007, with all results included in the global publication. Eurostat and OECD conduct separate comparison programmes for their member countries using a common methodology. Eurostat/OECD fully participated in the ring comparison, with four member countries collecting prices that have been used to bring their results into relation with those of the other ICP regions. Eurostat/OECD provided assistance with the global data review and with the inclusion of the CIS region in the final results. Eurostat and OECD are now fully engaged in the comparison for 2008, the data collection for which started in 2006.

## C. The ring comparison

16. Based on the decision of the Technical Advisory Group and the Executive Board, the 2005 round had selected a group of countries and areas — a few from each region — that participated in a separate and parallel worldwide comparison organized specifically to provide a link between regions. This has become known as the "ring comparison" because of the way in which it worked to determine the

relativities between different global regions. In total, 18 ring countries[2] conducted special price collections using a global product list so as to enable those relativities to be calculated.

17. A regional exception with respect to the ring comparison was CIS, whose regional results were linked to the OECD/Eurostat region using the Russian Federation as a bridge country. The Russian Federation priced both the CIS and the OECD/Eurostat product lists so as to provide the link. The ring comparison was used to combine the results for the other five regions. The CIS countries' results were then linked to those for the other regions using the relationship between the Russian Federation and the OECD/Eurostat region. In effect, the CIS results were linked to those of the rest of the world in a two-stage process. The first stage entailed using the Russian Federation as a bridge country; the second stage involved creating a link to the other four regions using the relationships established by the OECD/Eurostat countries that had participated in the ring comparison. The main reason for adopting the approach of using the Russian Federation as a bridge country was that this process had been used successfully in recent European Comparison Programme (ECP) rounds, hence, the conceptual expertise and practical experience required to enable this method to work were available in the region.

18. Developing the consumption list for ring countries was complicated because it involved several different phases. The starting point involved examining the product lists for each of the regions and checking off the products that each ring country had priced in the regional comparisons. Any products not priced by a ring country were discarded, while the remaining products were retained as products to be potentially included in the ring list. The usefulness of the worldwide structured product description (SPD) approach was evident in this phase. Even though the final product specifications differed from one region to another, the regional specifications were used to identify those products that were most likely to be comparable between regions. In consultation with the ring countries, the Global Office prepared the final list for the household consumption products.

19. As was the case for the regional comparisons, products that were not covered by this process were those for housing, government consumption, health, equipment and construction. Global specifications were prepared for these items and priced by all countries, except those in the CIS, OECD and Eurostat regions, for their regional comparisons, with the same data used for the global results. Ring countries in the OECD/Eurostat region priced the ICP global specifications for the ring comparison.

20. Given that fixity was applied in each region, the relationships between regions obtained through the ring comparison were scalars that adjusted the basic heading results from each region to a comparable level. The outcomes were PPPs (and volumes calculated from them) at the basic heading and aggregate levels that could be compared between any pair of countries in the world.

[2] Ring countries and areas for the 2005 round were Africa: Cameroon, Egypt, Kenya, Senegal, South Africa and Zambia; Asia: Hong Kong, Special Administrative Region of China, Malaysia, Philippines and Sri Lanka; Latin America: Brazil and Chile; Western Asia: Jordan and Oman; OECD/Eurostat: Estonia, Japan, Slovenia and United Kingdom of Great Britain and Northern Ireland.

## D. Data validation and handling of special data issues

21. In general, data validation was at all times a critical part of the 2005 ICP, with even greater intensity during the global data preparation stage. Several stages were involved, with some of them entailing an iterative process designed to clean up the data progressively. The process was time-consuming and required close coordination and goodwill on the part of the regional coordinator and the national coordinators in each region. A key aim of this very methodical data validation process undertaken in all regions was to ensure that the prices and national accounts data were as comparable as possible between countries, so that consistent results would be produced. The global report contains an extensive section on data validation that runs through all the key steps taken for this round, including data validation for prices and national accounts, and data issues and accuracy.

22. The validation of the ring data required an extra step, which was evaluation of the linking factors in addition to the review of the prices. This process led to many questions regarding whether the prices for some ring countries were reflective of their region. It also raised some questions about the overall price levels in Asia and Africa. Market evaluations were carried out in both regions; in all cases, the respective ring price levels were found to be appropriate and consistent with the regional prices.

### Some special data issues

23. *Egypt*. Egypt priced the products in both the Africa and Western Asia comparisons. It also was a ring country. There were extensive discussions by the Technical Advisory Group and the Executive Board and consultation with the country and it was determined that PPPs would be computed for Egypt separately for Africa and Western Asia. Both regions included Egypt's results in their regional reports. Therefore, Egypt appears in the global report in both regions. The fact that the results for Egypt from each region were averaged by taking the geometric mean of the PPPs allowed Egypt to appear in each region with the same ranking in the world comparison.

24. *Large-country data issues and caution to users*. ICP included economies ranging from city States to large and diverse countries such as China, India, Brazil and the Russian Federation, which collectively account for over 40 per cent of the world's population and include many people living in remote rural locations. These and similar countries had to produce national average prices for goods and services that were comparable with those of other economies in their region. The accuracy of the PPPs for these countries depended upon the extent to which the selected goods and services were representative of their entire economy and on their ability to provide nationally representative average prices. The needed measurement of prices for internationally comparable goods and services will entail the greater likelihood of their reflecting consumption patterns of urban areas. If this "urban bias" is consistent between countries, and if the urban-to-rural price differentials are similar across countries, any bias will tend to cancel out in the estimation of PPPs; if not, results for some countries may be biased, up or down, depending on the extent of over- or underrepresentation of urban and rural areas.

25. *China*. China submitted prices for 11 administrative areas and the urban and rural components. The World Bank and the Asian Development Bank extrapolated

these 11 city prices to the national level. A detailed annex has been added to the global report to provide information on the calculation of the national annual averages for China. Also included in the global report is other qualifying information regarding data for China.

26. *Imputation of national accounts components.* Some countries in Africa and Asia did not submit price data for some or all components of government, equipment and construction; but they were able to provide data from their national accounts for all components of GDP. To provide real GDPs for all countries, results for the missing categories were imputed using results from countries within each region producing full results. The following countries furnished data for all categories of GDP plus prices for all consumption items from which GDP volumes were then imputed: Angola, Burkina Faso, Cape Verde, Comoros, Democratic Republic of the Congo, Djibouti, Gabon, Guinea, Guinea-Bissau, Liberia, Lesotho, Maldives, Mauritania, Morocco, Namibia, Rwanda, Sao Tome and Principe, Sudan, Swaziland, Togo, Uganda and Zimbabwe.

27. *Potential GDP and population data issues.* The global report cautioned users very clearly with respect to comparing economies by their GDPs or in per capita measures. Mindful that there might be errors in the calculation of GDP and population sizes as well as in the estimation of PPPs, the global report pointed out that small differences should not be considered significant. It was suggested to users that, rather than rank countries, they should preferably group countries by broad size categories. Cautionary notes were also included about making comparisons of price levels or per capita expenditures at low levels of aggregation, where small errors may lead to large discrepancies.

28. *Estimation of PPPs for non-benchmark countries.* ICP 2005 included 146 economies; at least another 64 countries or territories did not participate for a variety of reasons, including lack of resources or no national interest. Although these non-benchmark countries account for only a small share of the global economy and population, it is important to include as many of them as possible in a comprehensive database. The ICP Global Office working with the Technical Advisory Group agreed that a simple and transparent estimating equation using information from the benchmark countries would be applied. The same estimation equation had been deployed in the previous round (1993-1996) of ICP. The global report includes a special annex to explain this method.

## E. Data policies (revision, access and confidentiality)

29. *Data revision policy.* It is particularly important to note that the ICP Executive Board approved a data revision policy for preparing and producing the final global data release where data will be presented in greater detail than in the preliminary data release. Types of revisions that were noted in the policy for consideration when the final ICP results are published encompassed the following:

(a) National accounts might be updated or revised. Countries routinely publish revisions to their national accounts. The PPPs themselves will not be recomputed to reflect the revised GDP because they are estimated on the basis of expenditure shares rather than on the basis of the actual level. However, PPP-based GDP or its components might be revised;

(b) Additional information on average prices might be provided. However, revisions will be effected only after the new data undergo the same validation process used for the original data;

(c) Questions from data users about some results might signal the need for further analysis to determine the possibility of there being undetected errors in the data which, if found, will be corrected.

30. The revision policy also noted that revisions were expected to be few in number because of the rigorous data analysis used and the extensive review of national accounts undertaken. The ICP publications and website will note where data have been revised along with the reason in order to assist the data users in updating their databases.

31. *Data access and confidentiality.* The World Bank has developed a policy that takes account of confidentiality restrictions in relation to access to detailed ICP data (that is to say, at the level of basic headings and below). The policy respects the access rules of all participating countries, while at the same time facilitating public access as far as possible. Aggregate results published in paper publications will also be available electronically; more detailed results will be available only electronically. Access to certain data, such as basic heading data and below, will be restricted to bona fide researchers. The full details of the access policy are available on the World Bank website (www.worldbank.org/data/icp).

## F. Sharing of knowledge gained from the 2005 round of ICP

32. Development of knowledge products for this round of ICP has been an important consideration with respect to ensuring that adequate information is available to assist data users and producers and that it may be built upon for future rounds. Among the activities carried out by the Global Office and its external consultants were the development of ICP standards, the preparation of the framework to determine the goods and services to be priced and the preparation of the *ICP 2003-2006 Handbook* and the *ICP Operational Manual*. The Global Office has also been regularly publishing an ICP Newsletter, which brings together articles and papers from prominent experts involved in ICP-related work. The Newsletter has also been providing updates of the ICP 2005 round. As the round is coming to an end, the Newsletter has been modified to be more technical and has been renamed the ICP Bulletin.

33. The ICP website has continued to be a rich source of information for users. Aside from the global website, there are several regional ICP websites with more detailed regional information. The Global Office continues to maintain the website and provides, in addition to more technical textual information about ICP, easy-to-use data access and extraction functions so as to meet the needs of a wide range of users ranging from casual to more advanced users.

## G. ICP software

34. An important innovation introduced in the 2005 ICP by the World Bank is a suite of well-integrated and specialized software tools to support the collection, storage, validation and processing of price data so as to produce PPPs at various

levels of aggregations. Underlying these tools is a database in which individual as well as average prices of products can be stored in a secure manner. The database also stores the GDP expenditure weights (at the basic heading level), spatial weights, exchange rates and population data.

35. The collective set of software tools is called the ICP "ToolPack", which provides an end-to-end solution for the ICP process and introduces methodological rigour and "best practices", as well as transparency in the computations. The ToolPack covers activities such as: product list preparation for pricing, using structured product description; survey preparation; user and product outlet specification; price data collection and data entry; data validation at the country level with specific country diagnostic reports; and data processing and data exchange between the regional coordinators and national coordinators. At the regional level, the ToolPack has a number of data validation tools for cross-country analysis across regions or subregions. Finally, the ToolPack has several innovative features for reporting on price data aggregation undertaken to produce PPPs using a variety of statistical methods.

36. During the final phases of ring comparison and global data calculations, further tools with advance features were being developed to accompany the ToolPack. These contain the metadata on how the various components of the GDP are aggregated to higher levels. All together, these tools can provide a significant source of knowledge for future rounds of ICP and can contribute to improvements in data quality, data-processing transparency, and overall efficiency.

## H. Governance of the ICP 2005 round

37. The Executive Board has been very active in 2007, having held two board meetings and maintaining contacts through e-mails. Regular status reports from the Global Manager highlighted key issues for the Board to consider with respect to providing strategic leadership and making decisions about priorities, standards and the overall work programme. The Chair and the other Board members also provided assistance and oversight of the activities of the ICP Global Office.

38. The Technical Advisory Group was very active during the final stages of the 2005 round, having provided advice on technical issues. A subset of the Group focused, in past months, on the special area of overseeing and providing guidance to the Global Office on the running of the ring comparison. The Chair of the Group also provided support in documenting some of the data issues that had come up during the final data validation phase. The responsibility of the Group was to resolve conceptual and methodological matters. The Poverty Advisory Group, with some membership overlap with the Technical Advisory Group, also played an important role in examining the implications of this ICP round for poverty measurement techniques.

39. The regional offices continued to carry out coordination of ICP work in each of the five geographical regions (Africa, Asia/Pacific, CIS, Latin America and Western Asia) through the African Development Bank, the Asian Development Bank (ADB), the Statistical Office of CIS in partnership with the State Statistical Service of the Russian Federation and the Bureau of Economic Analysis (Moscow), Statistics Canada in cooperation with the Economic Commission for Latin American and the Caribbean (ECLAC), and the Economic and Social Commission for Western

Asia (ESCWA). In addition, the countries included in the regular PPP programme run by OECD and Eurostat were treated as an autonomous region for the purposes of incorporating their estimates into the worldwide estimates. The regional coordinators played a critical role in the technical review and validation of the preliminary global results.

40. In most countries, different agencies were involved in providing the national accounts and prices data for ICP. In such cases, one agency was nominated as the national coordinating office and within that agency a national ICP coordinator was appointed. The main responsibilities of the national coordinator were to ensure that the country's ICP data (national accounts, prices and wages) were correctly estimated, that statistical and field staff (involved in collecting prices) were trained in the concepts underlying ICP and the practical implications for collecting prices, that data were edited and entered into the ICP database, and that editing queries from the regional coordinator were handled promptly. The national coordinators also attended the data validation workshops that were held in each of the regions to check the consistency of the data supplied within each region.

41. The Global Office within the World Bank in Washington, D.C., continued to carry out the overall global data coordination and provide technical and financial support to regional efforts. The Global Manager and a team of professional statisticians and administrative staff in the Development Data Group of the World Bank undertook a heavy work programme so as to be able to complete the round and publish preliminary data on 17 December 2007. The Global Office provided regular updates to the Executive Board and organized meetings for the Executive Board, regional coordinators and the Technical Advisory Board. The Global Office was the coordinator of the ring comparison and also helped the regions on an as-needed basis, for example, by providing extensive support for the preparation of the Western Asia results and report.

42. There was a close liaison among the World Bank, OECD and Eurostat during both the planning and the operational phases of the 2005 ICP. The aim was to incorporate the OECD/Eurostat results directly into ICP by treating the OECD/Eurostat programme as involving a sixth world "region" for ICP purposes. The techniques used by OECD and Eurostat differed in some respects from those used in the other regions because the OECD/Eurostat programme had developed particular methods over the years that could not always be replicated in other regions. However, the close relationships between the coordinating organizations have meant that the results could be satisfactorily integrated with each other despite the different procedures used.

## III. Steps remaining to complete the 2005 round

43. Since the preliminary data release in December, the Global Office has been maintaining its focus on the final data release in the first quarter of 2008. While the preliminary report focused on a small number of indicators, the final report will provide more detailed disaggregated-level data. The final global report will build on the preliminary report, but will include more extensive sets of graphs and charts designed to summarize key findings derived from the data. The *ICP Handbook* will be published in final form at the same time.

44. The Global Office is also committed to ensuring the availability of data documentation so as to be able to respond to user queries. Some additional work is required to complete the ToolPack and ensure that all modules developed during the final stage of the programme are well integrated with the others.

45. The Global Office will also continue to maintain the ICP website and to issue the ICP Bulletin, based on user demand.

46. IMF provided additional funds in July 2007 that contributed greatly to the effort to carry out the final data validations and review needed for the global publication. In November 2007, the Islamic Development Bank provided financial support to the ICP Global Trust Fund for ICP capacity-building projects for Islamic Development Bank member countries. The Global Office will continue to provide needed support to these countries with the goal of preparing the groundwork for the future round.

## IV. Conclusions and points for discussion

47. **The present report is the final report of the Global Office located at the World Bank on the status of the ICP 2005 round. The round is nearing completion, with a number of regional reports and the preliminary global report released in early December marking the successful outcome of one of the largest international statistical programmes. The evaluation by the Friends of the Chair of the 2005 ICP would provide valuable insights on the strengths and weaknesses of the round and on what needs to be improved. This report is scheduled to be discussed during the thirty-ninth session of the Statistical Commission.**

48. **The Statistical Commission is requested to take note of the progress made and comment on any areas that still need to be addressed by the ICP 2005 round.**